Preventive & Social Medicine

Tuberculosis

Treatment:

- Program NTEP- National TB Elimination Program

- Same for both new and previously treated patients
- Duration: 6 months
- Frequency: Daily regimen
- 2 HRZE + 4 HRE
- Number of tablets per day: decided based on body weight
- Number of weight bands: 5 (For adults)

Organisation

- TB Unit: 1 per block in rural areas and 1 per 1.5-2.5 lakh in urban areas
- DMC: 1 per 50k in rural areas and 1 per 1 lakh in urban areas (Designated Microscopy Unit)

DMC- Most peripheral unit for DIAGNOSIS (Not Treatment)

Updates:

- **ISONIAZID Preventive therapy (IPT):** Preventive strategy to prevent reactivation of latent infection.
  - **3 I's in HIV-TB:** Isoniazid Preventive Therapy, Intensified Case finding of TB, Infection control Practices
- **99- DOTS:** Patient has to give a MISS CALL on the number given inside the blister pack of the drug. Helps to improve/monitoring the patient compliance.
- **NIKSHAY:** Website used for monthly notification of a TB case.
- **NIKSHAY POSHAN ABHIYAN:** Nutrition campaign for TB patients. Money allotted is Rs 500 per month to the patient.
- **ACTIVE CASE FINDING:** Done for TB in vulnerable populations and overcrowded areas
- **Mandatory notification** of TB cases. Notifier receives Rs 1000 per notification
- **NATIONAL STRATEGIC PLAN (2017-2025)** for TB Elimination
- **Four Pillars for TB Elimination:**
  - Detect
  - Treat
  - Prevent
  - Build

Adolescents

- **RKSK (6 components)**: Nutrition, ARSH, mental health, injuries and violence, substance abuse, NCDs
- **Menstrual hygiene scheme:** Sanitary Pads with brand name -FREEDAYS. 6 Pads in 1 pack. Each pack costing Rs 6.
- **SAATHIYA**: Peer education programme, concerned with helping and counselling for mental and sexual health.
- **WIFS- Weekly Iron and Folic Acid Supplementation-** Part of INIPI, Blue coloured tablet, 60 mg elemental iron + 500 tablet, Deworming- Albendazole one tablet, every 6 months. Also, Nutritional Counselling and Screening for Severe Anemia.

Mothers

- **NISCHAY:** Urine Pregnancy Testing Kits provided free of costs at subcentres.
- **JSY- Janani Suraksha Yojana:** Program to promote Hospital Delivery and therefore reduce maternal mortality. Cash incentives is given to mother and the ASHA workers in both urban and rural areas.

Cash Assistance for Institutional Delivery (in Rs.)

Category	Rural Area		Urban Area	
	Mother's package	ASHA's package*	Mother's package	ASHA's package**
LPS	All pregnant women delivering in government health centres 1400	600	1000	400
HPS	All BPL/Scheduled Caste/Scheduled Tribe (SC/ST) women delivering in a government health centre 700	600	600	400

- **JSSK (JANANI SHISHU SURAKSHA KARYAKRAM) –** All JSY beneficiaries will receive free services. Also free service for SICK INFANT (upto 1 yr of age)
  - Free delivery/ Caesarean Section
  - Free drugs, diagnostics and Blood transfusion
  - Free assured transport (ambulance service) from home and drop back.
  - Similar facilities are extended to the infant upto one year of age.

Janani Shishu Suraksha Karyakaram

- **PMSMA(PRADHAN MANTRI SURAKSHIT MATRITVA ABHIYAN)**

- The Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) is being introduced to ensure quality Antenatal to over 3 crore pregnant women in the country.
- Under the campaign, a minimum package of antenatal care services would be provided to the beneficiaries on the **9th day of every month** at the Pradhan Mantri Surakshit Matritva Clinics to ensure that every pregnant woman receives at least one checkup in the 2nd and 3rd trimester of pregnancy.
- If the 9th day of the month is a Sunday/ a holiday, then the Clinic should be organized on the next working day.

Package of services under PMSMA

1. Routine antenatal check up
2. Diagnostic services
3. Identification and management of high risk pregnancy
4. Counselling on Nutrition, Family Planning, Birth Preparedness, New born and Post Natal care.

Other components of PMSMA are:

1. Communication for behavioural change
2. Health system strengthening for providing quality services
3. Referral transport.

- Filling out the MCP cards at these clinics should be mandatory and a sticker indicating the condition and risk factor of the pregnant women should be added onto MCP card for each visit:

o Green Sticker: For women with *no risk factor* detected

o Red Sticker: For women with *high risk pregnancy*

o Blue Sticker: For women with *Pregnancy Induced Hypertension*

o **Yellow Sticker** : Pregnancy with *co-morbid conditions* such as diabetes, hypothyroidism, STIs etc.

- **LAQSHAY-** Initiative to promote Quality in the Labour Room Infrastructure
  - LaQshya program envisages to improve quality of care in labour room and maternity OT.
  - Under the initiative, multi-pronged strategy has been adopted such as improving Infrastructure upgradation, ensuring availability of essential equipment, providing adequate Human Resources, capacity building of health care workers and improving quality processes in labour room.
  - Implementation of 'fast-track' interventions (NQAS assessment, Trainings, Mentoring, Reviews etc.)

- Capacity-building of healthcare workers by skill-based training like Dakshta & improving quality processes in the labour room.
- To strengthen critical care in Obstetrics, dedicated Obstetric ICUs at Medical College Hospital level and Obstetric HDUs at District Hospital are operationalized under LaQshya program.

- **DAKSHATA-** Capacity building program, empowerment, skilled healthcare workers and service providers are given training in immediate intrapartum and postpartum care.
- **SUMAN Scheme (Surakshit matritva aashwasan) –** Tagergetting for ZERO preventable maternal and neonatal death. Service Quality is guaranteed and there is presence of a service charter. Both customer feedback and grievance redressal mechanisms work.

CHILD

- **HBNC- Home based newborn care:** ASHA home visits after delivery and mother coming back to her home. Visits-
  - 7 Visits in case of home delivery (Day 1, 3, 7, 14, 21 , 28, 42)
  - 6 Visits in case of institutional delivery (Day 3, 7, 14, 21 , 28, 42)
  - 5 Visits in case of caesarean section delivery (Day 7, 14, 21 , 28, 42)
  - Rs 250/- per neonate
- **HBYC- Home based care of Young Child:** ASHA home visits to promote nutrition like complementary feeding and breast feeding
  - 5 Visits- at 3 months, 6 months, 9 months, 12 months, 15 months
  - Rs 250/- incentive to ASHA per child.
- **FBNC- Facility based Newborn Care:**
  - The various components of FBNC are: **Newborn Care Corners (NBCCs)** are established at delivery points to provide essential newborn care at birth soon after delivery. This are dedicated space within the delivery room where essential care as well as life saving care including resuscitation is provided to the newborn. **Newborn Stabilization Units (NBSUs)** are facility located within or in close proximity to the maternity ward where sick and low birth weight newborns are cared for short periods**. Special Newborn Care Units (SNCUs)** is a neonatal unit in the vicinity of the labor room to provide special care (all care except assisted ventilation and major surgery) to the sick newborns.
- **INAP- Indian Newborn Action Plan:** To reduce NMR to single digit by 2030.
- **RBSK- RASHTRIYA BAL SWASTHYA KARYAKRAM:** Screening initiative for children from birth till 18 years of age.
  - Screening for 4 D's
  - Implemented at Facilty or Community based centres , Anganwadi Centres and Givt Schools.

INAP
India Newborn Action Plan

RBSK
RASHTRIYA BAL SWASTHYA KARYAKRAM
राष्ट्रीय बाल स्वास्थ्य कार्यक्रम
FROM SURVIVAL TO HEALTHY SURVIVAL

Identified Health Conditions for Child Health Screening and Early Intervention Services	
Defects at Birth	**Deficiencies**
1. Neural Tube Defect	10. Anaemia especially Severe Anaemia
2. Down's Syndrome	11. Vitamin A Deficiency (Bitot spot)
3. Cleft Lip & Palate / Cleft Palate alone	12. Vitamin D Deficiency (Rickets)
4. Talipes (club foot)	13. Severe Acute Malnutrition
5. Developmental Dysplasia of the Hip	14. Goiter
6. Congenital Cataract	
7. Congenital Deafness	
8. Congenital Heart Diseases	
9. Retinopathy of Prematurity	
Childhood Diseases	**Developmental Delays and Disabilities**
15. Skin conditions (Scabies, Fungal Infection and Eczema)	21. Vision Impairment
16. Otitis Media	22. Hearing Impairment
17. Rheumatic Heart Disease	23. Neuro-Motor Impairment
18. Reactive Airway Disease	24. Motor Delay
19. Dental Caries	25. Cognitive Delay
20. Convulsive Disorders	26. Language Delay
	27. Behaviour Disorder (Autism)
	28. Learning Disorder
	29. Attention Deficit Hyperactivity Disorder
30. Congenital Hypothyroidism, Sickle Cell Anaemia, Beta Thalassemia (Optional)	

9

- **MAA (MOTHERS ABSOLUTE AFFECTION)** to promote-
  - Early Breastfeeding
  - Exclusive Breastfeeding for 6 months.
  - Promotion and provision for counselling services
- **SAANS (Social awareness and action to neutralize pneumonia successfully)-** Social awareness and action program to neutralize pneumonia.
  - Pre-referral dose of antibiotics
  - Pulse Oximeters to be present at health and wellness centres
  - Community Awareness for pneumonia prevention.

Malaria

MALARIA ELIMINTION PLAN (2016-2030)

- Elimination- No cases of malaria for 3 consecutive years.

S. No.	Categories of states/UTs	Definition
1.	**Category 0:** revention of re-establishment phase	States/UTs with zero indigenous cases of malaria.
2.	**Category 1:** limination phase	States/UTs (15) including their districts reporting an API of less than 1 case per 1000 population at risk.
3.	**Category 2:** re-elimination phase	States/UTs (11) with an API of less than 1 case per 1000 population at risk, but some of their districts are reporting an API of 1 case per 1000 population at risk or above.
4.	**Category 3:** ntensified control phase	States/UTs (1[illegible] with an API of 1 case per 1000 population at risk or above.

5

Kala Azar

- Elimination by 2020 (<1 case per 10 thousand at subdistrict level)
- **RK39-** Rapid diagnostic kit for antigen detection
- **DOC-** Liposomal AMB
- **Kala Azar Fortnight-** Active Case finding for endemic areas
- **Indoor Residual Spray:** Synthetic PYRETHEROIDS > DDT

Filariasis

- Elimination targeted by year 2021 (Microfilaria should be <1% in the community)
- Mass Drug Administration: Ivermectin + DEC + Albendazole (Triple Drug therapy)

HIV-AIDS

- ART → TENOFOVIR + LAMIVUDINE + EFAVIRENZ **[TLE]** (Fixed Dose Formulation)
- Treatment should be initiated as soon as the diagnosis is made, irrespective of any CD4 count or any clinical staging. Life fong therapy.
- PPTCT: Prevention of Parent to Child Transmission
  - Mother diagnosed to be HIV: TLE started in any trimester any stage.
  - Child of HIV mother: NEVIRAPINE (min duration- 6 months)

National Strategic Plan: 90-90-90 for 2020 , 95-95-95 by year 2024

Polio

- INDIA Polio free certificate: March 2014
- South East Asian Region (SEAR) polio free certification: March 2014
- **5 out of 6 WHO regions are polio-free**
- **Polio Endemic Region:** Means that transmission of Wild Polio Virus is seen
- Polio endemic region of WHO - 1 : East Mediterranean region
- Polio endemic countries - 2 : Pakistan , Afghanistan
- Wild polio strains eradicated : WPV 2 and WPV 3

Leprosy

- Treatment:

Age group	Drug	Dosage and frequency	Duration	
			MB	PB
Adult	Rifampicin	600 mg once a month	12 months	6 months
	Clofazimine	300 mg once a month and 50 mg daily		
	Dapsone	100 mg daily		

- **SPARSH Leprosry Awareness Campaign-** Mascot is Sapna (Schoolgirl)

- **Leprosy Case detection campaign:** Active Case Finding in High prevalence districts
- **SET (Survey, Education, Treatment) Scheme-** Involvement of NGOs for leprosy Survey, education and Treatment

NATIONAL IMMUNIZATION SCHEDULE

Age	Vaccines given
Birth	Bacillus Calmette Guerin (BCG), Oral Polio Vaccine (OPV)-0 dose, Hepatitis B birth dose
6 Weeks	OPV-1, Pentavalent-1, Rotavirus Vaccine (RVV)-1, Fractional dose of Inactivated Polio Vaccine (fIPV)-1, **Pneumococcal Conjugate Vaccine (PCV) -1***
10 weeks	OPV-2, Pentavalent-2, RVV-2
14 weeks	OPV-3, Pentavalent-3, fIPV-2, RVV-3, **PCV-2***
9-12 months	Measles & Rubella (MR)-1, **JE-1**** , **PCV-Booster***
16-24 months	MR-2, **JE-2****, Diphtheria, Pertussis & Tetanus (DPT)-Booster-1, OPV – Booster
5-6 years	DPT-Booster-2
10 years	Tetanus & adult Diphtheria (Td)
16 years	Td
Pregnant Mother	Td-1, Td-2 or Td-Booster***

* **PCV** in selected states/districts: Bihar, Himachal Pradesh, Madhya Pradesh, Uttar Pradesh (selected districts) and Rajasthan; in Haryana as state initiative
** JE in endemic districts only
*** One dose if previously vaccinated within 3 years

For pregnant woman

Td-1 : early in pregnancy

Td-2 : 4 weeks after Td-1

Td-B: if pregnancy occur within 3 years of last pregnancy and 2 Td doses were received

Vaccine	Due age	Max age	Dose	Diluent	Route	Site
For Infants						
BCG	At birth	till one year of age	(0.05 ml until 1 month) 0.1ml Beyond age 1 month	YES Manufacturer supplied diluent (Sodium chloride)	Intra-dermal	Upper Arm - LEFT
Hepatitis B - Birth dose	At birth	within 24 hours	0.5 ml	NO	Intra-muscular	Antero-lateral side of mid-thigh - LEFT
OPV-0	At birth	within the first 15 days	2 drops	-	Oral	Oral
OPV 1, 2 & 3	At 6 weeks, 10 weeks & 14 weeks	till 5 years of age	2 drops	-	Oral	Oral
Pentavalent 1, 2 & 3** (Diphtheria+ Pertussis + Tetanus + Hepatitis B + Hib)	At 6 weeks, 10 weeks & 14 weeks**	1 year of age	0.5 ml	NO	Intra-muscular	Antero-lateral side of mid-thigh - LEFT
Fractional IPV (Inactivated Polio Vaccine)	At 6 & 14 weeks	1 year of age	0.1 ml	NO	Intra-dermal	Upper Arm - RIGHT
Rotavirus‡ (Where applicable)	At 6 weeks, 10 weeks & 14 weeks	1 year of age	5 drops	NO	Oral	Oral
Pneumococcal Conjugate Vaccine (PCV) (Where applicable)	At 6 weeks & 14 weeks At 9 completed months - booster	1 year of age	0.5 ml	NO	Intra-muscular	Antero-lateral side of mid-thigh - RIGHT
Measles / Rubella 1st dose ##	At 9 completed months-12 months.	5 years of age	0.5 ml	YES Manufacturer supplied diluent (Sterile water)	Sub-cutaneous	Upper Arm - RIGHT
Japanese Encephalitis – 1 @ (Where applicable)	At 9 months-12 months@	15 years of age	0.5 ml	YES - Manufacturer supplied diluent (Phosphate Buffer Solution)	Sub-cutaneous	Upper Arm - LEFT
Vitamin A (1st dose)	At 9 months	5 years of age (1 lakh IU)	1 ml	-	Oral	Oral

Common Mistakes

To Prevent Spread of Disease

Properties	Quarantine	Isolation	Physical Distancing
Separation of	Healthy contacts	Cases	Healthy people
Done for	Other persons around	Cases themselves + Other people	
Prevention	Primary (specific protection)	Secondary (treatment)	Primary
Duration	Till Max. IP	Till period of communicability	Till Max. IP

Diseases under International Surveillance (PRISM)

- P: Poliomyelitis
- R: Rabies, Relapsing fever
- I: Influenza
- S: Salmonellosis
- M: Malaria
- Louse borne typhus fever

Diseases under International Health Regulations (IHRs)

Group I Diseases	Group II Diseases
Even a single case of • Small pox • Polio caused by wild polio • Human influenza caused by new serotype • SARS	Cholera Pneumonic Plaque Yellow fever Viral Hemorrhagic fever West Nile Dengue Rift valley Meningococcal

Multiplication Factors in PSM

- **X1000**
  - If nothing is mentioned in the question then for majority of indicators in PSM have a multiplication factor of 1000
- **X100**
  - • COUPLE PROTECTION RATE (CPR)
  - • CASE FATALITY RATE (CFR)
  - • SURVIVAL RATE (SR)
  - • SECONDARY ATTACK RATE (SAR)
  - • Sensitivity; Specificity; PPV; NPV9
  - • ABER

Exceptions	
INDICATOR	**MULTIPLICATION FACTOR**
MMR	1 LAKH
PEARL INDEX	1200

Cancer Data

National Cancer Registry Report (Report released on (18th August 2020)

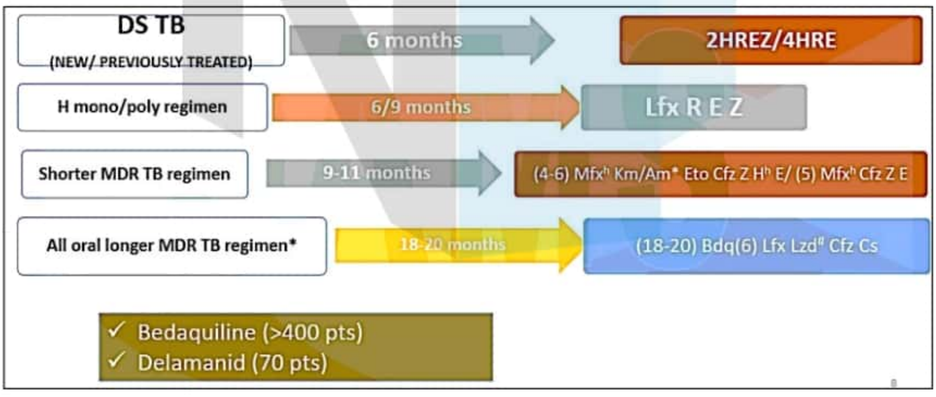
INCIDENCE in India

- Cancer of lung, mouth, stomach and esophagus were the most common cancers among males
- Cancer of breast and cervix uteri were the most common cancers among females

Global & Indian burden of TB

Estimated TB Burden	Global	Rate per 100,000 Global	India	Rate per 100,000 in India
Mortality	1.2 Million	17	440,000 (31%)	32
Mortality (HIV+TB)	251,000	4.0	9700 (4%)	0.72
Incidence of TB cases	10.0 Million	133	2.69 Million (27%)	199
HIV Prevalence in Incident TB cases	920,000	12.0	92,000 (10%)	6.8
Incidence of MDR TB	500,000	7.4	130,000(24%)	9.6

TB- Treatment Strategy



RECENT UPDATES

- **National Education Policy was launched**
  - HRD ministry changes to "Ministry of Education"
  - Mid-day Meal Program is now under Ministry of Education
- **ESI Act, 1948**
  - **Financial Sharing –** Employer 3.25% , Employee 0.75%

- **Benefits**

Benefit	Facility
Medical	Full medical care
Rehabilitation	
	@100% wage
Enhanced sickness	Up to 7 days for vasectomy & up to 14 days for tubectomy
Maternity	• Up to 26 weeks for confinement • Up to 6 weeks for miscarriage or MTP • Up to 4 weeks for sickness arising out of pregnancy, confinement, premature birth

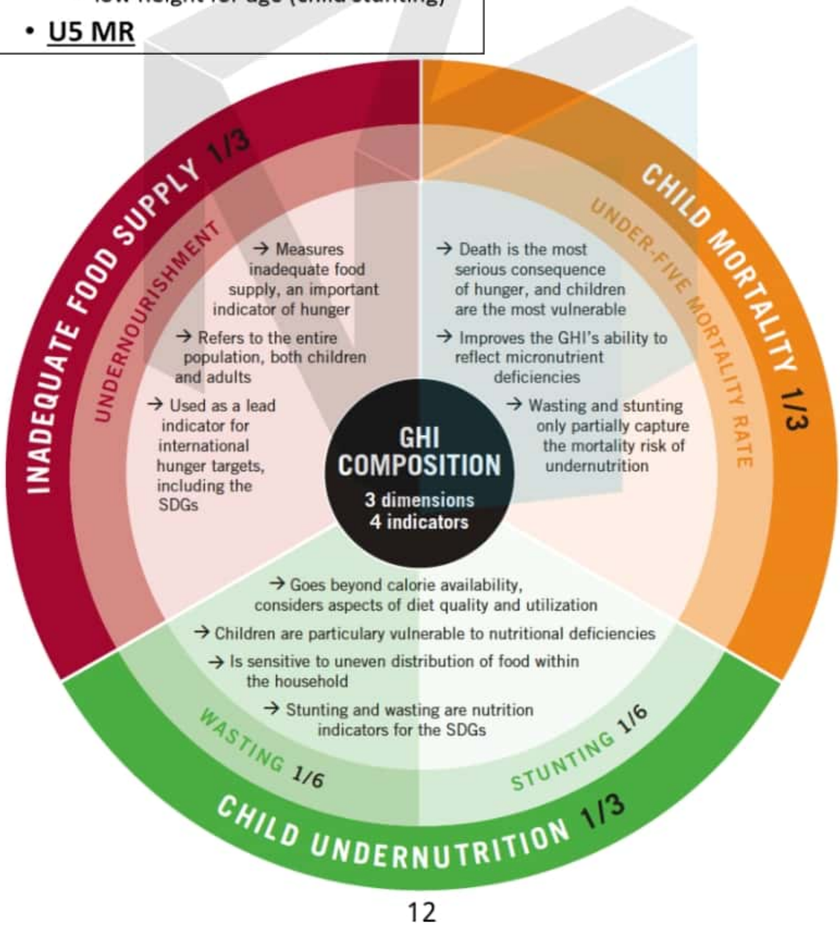
Benefit	Facility
	@ 90% of daily wage
• Temporary disablement (Till recovery) • Permanent disablement • Dependant	
Extended sickness	80% of daily wage payable for 2 years (730 days) for a set of 34 diseases
Sickness	70% of daily wage is payable for 91 days
Funeral expenses	Cash amounting to 15000/-

- **Surakshit Matritva Aashwasan (SUMAN)**
  - **AIMS:**
    - Assured, dignified, respectful &quality healthcare at no cost
    - Zero tolerance for denial of services in public health facility
    - End all preventable maternal & new-born deaths & morbidities
    - Provide a positive birthing experience
  - **Beneficiaries:**
    - All pregnant female
    - All mothers up to 6 months post delivery
    - All sick new-born's (28 days)
  - **SERVICE GUARANTEE CHARTER (18 services included)**
    - All Pregnant Women/ New-born's visiting public health facilities are entitled to free services
    - Assured delivery plan for the High-Risk Pregnant women

- Free transport from home to health institutions (dial 102/108), assured referral services with scope of reaching health facility within one hour of any critical case emergency & Drop back from institution to home after due discharge **(minimum 48 hrs)**

- **GLOBAL HUNDER INDEX**

- **4 Indicator's are included:**
  - Proportion of country's child population that is undernourished (calorie intake insufficient)
  - Proportion of country's under 5 population that is having
    - low weight for height (child wasting)
    - low height for age (child stunting)
  - **U5 MR**


INADEQUATE FOOD SUPPLY 1/3
UNDERNOURISHMENT
→ Measures inadequate food supply, an important indicator of hunger
→ Refers to the entire population, both children and adults
→ Used as a lead indicator for international hunger targets, including the SDGs
CHILD MORTALITY 1/3
UNDER-FIVE MORTALITY RATE
→ Death is the most serious consequence of hunger, and children are the most vulnerable
→ Improves the GHI's ability to reflect micronutrient deficiencies
→ Wasting and stunting only partially capture the mortality risk of undernutrition
GHI COMPOSITION
3 dimensions
4 indicators
→ Goes beyond calorie availability, considers aspects of diet quality and utilization
→ Children are particulary vulnerable to nutritional deficiencies
→ Is sensitive to uneven distribution of food within the household
→ Stunting and wasting are nutrition indicators for the SDGs
WASTING 1/6
STUNTING 1/6
CHILD UNDERNUTRITION 1/3

- India's rank is 102/ 117 countries (Worst in South Asia); score is 30.3/ 100
- India's child wasting rate is the highest wasting rate of any country (20.8%)
- Reference period (for data): 2014- 2018

Scores	Interpretation
0	No hunger
< 10	Low hunger
20- 34.9	Serious hunger
35- 49.9	Alarming
≥ 50	Extremely alarming
100	Worst

- **Theme of the year**
  - World malaria day: Zero malaria starts with me
  - World TB Day: It's time
  - WHO Theme: Nurses & Midwives
- **Annual TB Report 2020**
  - Notification (2019): 24.04 lakh (90%)
  - Best performing state: Himachal Pradesh, Andhra Pradesh, Gujarat
  - Active case finding (ACF):
    - No. of people screened: 27.74 crore
    - Districts covered: 337
    - State covered: 23
    - Confirmed TB cases: 62958
- **Polio Update**

Polio Update

- African region has been declared polio free and has achieved elimination status.
- Nigeria was the last country to have reported case in this region.
- 5 out of 6 WHO regions are polio free
- Polio endemic region: means transmission of wild polio virus seen
- Polio endemic region of WHO-1: East Mediterranean region
- Polio endemic countries-2: Pakistan, Afghanistan

- **SRS 2018 report (Published in 2020 June)**

	Data	Indicator	
CRUDE BIRTH RATE (CBR)	20/ 1000 population	GROSS REPRODUCTION RATE (GRR)	1
CRUDE DEATH RATE(CBR)	6.2/ 1000 population	TOTAL FERTILITY RATE (TFR)	2.2
ANNUAL GROWTH RATE (AGR) = (CBR – CDR)/ 10	1.38		
POPULATION DOUBLING TIME = 70/ AGR	50.72 years		
Sex ratio at birth	899		
Working age group (15-59 years)	66%		
Total districts in India	733		

Paediatric Mortality		Population Distribution	
Indicator	**Data**	**0- 4 years**	**8%**
U 5 Mortality Rate	36/ 1000 live births	5- 9 years	8.6%
IMR	32/ 1000 live births (MP: max; Kerala: min)	10- 19 years (Adolescents)	19.5%
NMR	23/ 1000 live births	15- 44 years (reproductive age group)	53%
Early NMR	18/ 1000 live births	> 60 years	8.1%
Late NMR	6/ 1000 live births	Societal Dependency Ratio	0.54
Post NMR	9/ 1000 live births		
Peri natal MR	22/ 1000 live births		
Survival Index = (1000 – U5MR)/ 10	96.4%		

- **Recent Demographic Data- SRS 2020 July**

- Maternal Mortality Ratio (MMR): 113/ 100000 live births
  - Maximum: Assam
  - Minimum: Kerala
- Maternal Mortality rate: 7.3/ 100000 females in reproductive age group
- Lifetime risk: 0.3% $$Life\,Time\,Risk = 1 - \left(1 - \frac{Maternal\,Mortality\,Rate}{100000}\right)^{35}$$
- Maximum deaths in: 20- 24 years age group: 33%; 25- 29 years: 32%

Life Expectancy (in years):

Country	Male	Female	Cumulative
India	67.4	70.3	68.8
Japan (Maximum)	81.1	87.1	84.2

Healthy Life Expectancy (in years):

Country	Male	Female	Cumulative
India	58.7	59.9	59.3

Density/ 10000 Population:

1. Doctor's: 40.8
2. Nursing & Midwifery personnel: 162.1

Ref: World Health Statistics Report 2020

COVID-19

- WHO (under IHR) declared this outbreak as a public health emergency of international concern (PHEIC) on 30th January, 2020
- WHO declared COVID 19 as PANDEMIC on 11th March, 2020

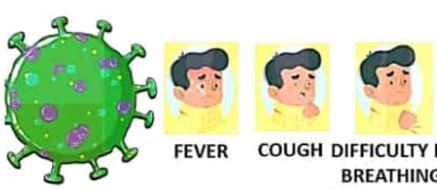
Table 1: Epidemiologic Clues that might signal a biologic or chemical terrorist attack

1	Single case of disease caused by an uncommon agent without adequate epidemiologic explanation
2	Unusual, atypical, genetically engineered or antiquated strain of an agent
3	Higher morbidity & mortality in association with a common disease or syndrome or failure of such patients to respond to usual therapy
4	Unusual disease presentation or Large number of cases of unexplained deaths
5	Disease with an unusual geographic or seasonal distribution
6	Stable endemic disease with an unexplained increase in incidence
7	Atypical disease transmission through aerosols, food, water

Table 2: Epidemiologic Clues that might signal a biologic or chemical terrorist attack

8	No illness in persons who are not exposed to common ventilation system when illness is seen in persons in close proximity who have a common ventilation system
9	Several unusual or unexplained disease coexisting in the same patient without any other explanation
10	Unusual illness that affects a large, disparate population or age group
12	Unusual pattern of death or illness among animals/ humans which precedes or accompanies illness or death in humans/ animals
12	Point source epidemic with compressed epidemic curve
13	Similar genetic type among agents isolated from temporally or spatially distinct sources
14	Simultaneous clusters of similar illness in non-contiguous areas, domestic or foreign

What are the common symptoms of COVID?



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Sometimes people may complain of the following symptoms:

- General weakness/fatigue,
- Headache,
- Body ache,
- Sore throat,
- Running nose,
- Loss of appetite
- Nausea/vomiting
- Diarrhoea,
- Altered mental status

1:48
0.00 KB/S
PSM

Suspected COVID-19 case

A A person who meets the clinical **AND** epidemiological criteria:

Clinical Criteria:

- Acute onset of fever AND cough;

OR

- Acute onset of **ANY THREE OR MORE** of the following signs or symptoms: Fever, cough, general weakness/fatigue, headache, myalgia, sore throat, coryza, dyspnoea, anorexia/nausea/vomiting, diarrhoea, altered mental status.

AND

Epidemiological Criteria:

- Residing or working in an **area with high risk of transmission of virus:** closed residential settings, humanitarian settings such as camp and camp-like settings for displaced persons; anytime within the 14 days prior to symptom onset;

OR

- Residing or travel to an **area with community transmission** anytime within the 14 days prior to symptom onset;

OR

- Working in **any health care setting**, including within health facilities or within the community; any time within the 14 days prior of symptom onset.

B A patient with **severe acute respiratory illness** (SARI: acute respiratory infection with history of fever or measured fever of ≥ 38 C°; and cough; with onset within the last 10 days; and requires hospitalization).

Probable COVID-19 case

A A patient who meets **clinical criteria** above AND is a **contact of a probable or confirmed case**, or epidemiologically linked to a cluster with at least one confirmed case.

B A **suspect case with chest imaging** showing findings suggestive of COVID-19 disease*

C A person with recent onset of **anosmia** (loss of smell) or **ageusia** (loss of taste) in the absence of any other identified cause.

D **Death**, not otherwise explained, in an adult with **respiratory distress** preceding death AND **was a contact of a probable or confirmed case** or epidemiologically linked to a cluster with at least one confirmed case.

*Typical chest imaging findings suggestive of COVID-19 include the following:

- Chest radiography: hazy opacities, often rounded in morphology, with peripheral and lower lung distribution
- Chest CT: multiple bilateral ground glass opacities, often rounded in morphology, with peripheral and lower lung distribution
- Lung ultrasound: thickened pleural lines, B lines (multifocal, discrete, or confluent), consolidative patterns with or without air bronchograms.

Confirmed COVID-19 case

A person with **laboratory confirmation of COVID-19 infection**, irrespective of clinical signs and symptoms.

See Laboratory testing for coronavirus disease (COVID-19) in suspected human cases, guidance, for details.

Note: Clinical and public health judgment should be used to determine the need for further investigation in patients who do not strictly meet the clinical or epidemiological criteria. Surveillance case definitions should not be used to guide clinical management.

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Who is a Contact?

Contact

- A contact is a person who has been exposed to a COVID-19 case, from 2 days before to 14 days after the case's onset of illness.

High Risk Contact

- Lives in the same household as the patient
- Anyone in close proximity (within 1 meter) of the confirmed case without precautions (mask) for > 15 minutes
- Had direct physical contact with the body of the patient including physical examination without PPE. (handshake, hugging, kissing, etc.)

Low Risk Contacts

- All other contacts, not meeting criteria for High Risk Contact

Examples of Contacts – You need to trace in the community

Household	**Family members, Visiting relatives** **Domestic help**
Community	Neighbors, friends Milk/vegetable vendors etc.
Travel	Co-travelers & drivers in flight/ train/bus/taxi/auto rickshaw etc.
Social Gatherings	If attended, social gatherings like marriage, parties, funeral , religious meetings, conferences

➢ **Contact Tracing:**

- Symptomatic: From 2 days before onset of symptoms to 14 days after onset of symptoms
- Asymptomatic: From 2 days before to 14 days after sample collection
- 80% of contacts should be traced and put under quarantine within 72 hours

On an average there could be up to 30 contacts per case

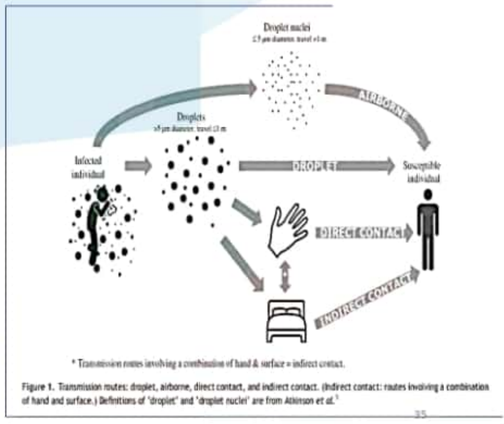
Coronavirus –Transmissibility

- Infected droplets
  - >5µm, travel <1m
- Aerosols
  - <5µm, travel>1m
- Contact
  - Hands, surfaces

Droplet and Indirect

Survivability outside body:

- 1-2 days on nonporous surfaces
- 8-12 hours on porous surfaces
- *Currently this information on 2019-nCoV not clear*
- *Common disinfectants such as 70% Ethanol and bleach can kill the virus*



* Transmission routes involving a combination of hand & surface = indirect contact.

Figure 1. Transmission routes: droplet, airborne, direct contact, and indirect contact. (Indirect contact: routes involving a combination of hand and surface.) Definitions of 'droplet' and 'droplet nuclei' are from Atkinson et al.[1]

Testing Strategy	Test	Time for results	Importance	Cost	Mechanism
1	RT PCR	3 to 5 hours	**GOLD STANDARD**	Costliest	Reads ORF of Protein & E gene
2	CBNAAT	45 to 60 mins.	**SCREENING & CONFIRMATION**	Less	Detect E & N gene in one go
	TRUENAAT	½ - 1 hour	**SCREENING**	Less	Detect E gene in 1st level for screening & RDRP gene in next level for confirmation
3	Rapid Point of Care (POC) antigen test	½ hour	**CONTAINMENT ZONES**	Less	
	Antibody test	Rapid: 5 to 10 mins. CLIA: 20 to 30 mins. ELISA: 3 hours	**SEROPREVALENCE SURVEY**		E gene for screening N gene, RDRP gene & ORF protein for confirmation IgM: 3rd to 22nd day IgG: from 7th day to long periods

Aarogya Setu App

- COVID 19 tracking mobile app
  - Developed by NIC/ National Informatics centre
  - Under ministry of electronics and information and technology

Aarogya Setu
मैं सुरक्षित | हम सुरक्षित | भारत सुरक्षित

Kavach ELISA

- Indigenous ELISA test kit for COVID 19 Antibody detection
- Developed by ICMR Delhi and NIV Pune (NIV Pune is the nodal lab. Designated for coronavirus testing)

Masks and Filtration (FFP: Filtration Face Piece)

Types	Filtration (min.)
FFP 1/ FMP 1	80%
FFP 2/ FMP 2	94%
FFP 3/ FMP 3	98%

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Epidemiological Parameters of COVID

- IP = 14 days; therefore
  - Duration of Quarantine = 1 IP= 14 days
  - Period of containment = 2 IP = 28 days
- R_0: 1- 4 (Degree of Spread)
- Period of communicability: 7- 14 days therefore period of isolation = 14 days
- Type of epidemic: single exposure point source then multiple exposure point source then now propagated epidemic
- Comorbidities associated with higher mortality: DM, HTN, Cardiovascular disease, Underlying Respiratory conditions, Age > 65 years.

Clinical Categorization

Clinical Severity	Criteria	Facility
Very mild/ pre-symptomatic	Very mild symptoms	Home isolation (provided facility is available)
Mild	Fever and/or uncomplicated upper respiratory tract infection without difficulty of breathing with SpO2 > 95%	Admit to CCC
Moderate	Pneumonia with no signs of severe disease, SpO2 < 95% on room air	Admit to DCHC
Severe	Difficulty in breathing requiring ventilator or spO2 < 90% on room air	Admit to DCH

PPE Kit (as per MoHFW)

- Gloves
- Gowns
- Goggles
- Apron
- Head cover
- Shoe cover
- Mask
- Face shield

Yellow Bag	Red Bag
• N 95 masks • Head cover/ cap • Shoe cover • Disposable linen cover	• Viral Transport Media (VTM) • Cryo/ plastic vials • Vacutainers • Pipette tips • Eppendorf Tubes • Gloves (Nitrile) • Goggles • Face shield • Splash proof apron • Plastic overall • Hazmat suit

Walk in Through Disinfectant Tunnel for COVID 19/ Spray used in Metro/ Cleaning Surfaces

- 1% sodium hypochlorite

Surveillance

- All 3 forms of surveillance are done; so what are the 3 forms?
- Team to actively follow-up with confirmed cases under home isolation till after 10 days of symptom onset and home quarantined contacts for 14 days
- On an average a supervisor is to supervise around 10 surveillance teams (subject to geography and availability of trained human resource), each team allocated not more than 100 households.

iGOT/ DIKSHA Platform

DIKSHA

iGOT
Integrated Government Online Training
FRONT LINE COVID WARRIORS:
WE CARE FOR THE ONES WHO CARE
Building capabilities to fight the Pandemic better and equipping you (Covid-19 Warriors) to empower the Nation against Pandemic
iGOT platform is uniquely designed for our
Nurses
ANMs, Asha Workers, Anganwadis
& all others
Doctors
Police & Volunteers
Containing self-learning guide with all the latest prevention techniques
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